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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,096	10/22/2001	Patrick G. Xavier	SD6851/S96528	5879

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EXAMINER	
GUILL, RUSSELL L	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,096	XAVIER ET AL.	
	Examiner	Art Unit	
	Russell L. Guill	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10/22/01 & 6/27/2003
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 - 24 have been examined. Claims 1 - 24 have been rejected.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.1. Claims 2 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 2 and 14, the claims recite, "a communication world, a sensor world, a mobility world, and a contact world". The Examiner cannot determine the meaning of "a mobility world, and a contact world". Using the specification, the Examiner cannot determine a supported interpretation for use in claim examination. Correction or amendment is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1 - 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims appear to be directed to an abstract idea that is not tangible.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) in view of Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons), further in view of Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

6.1. The art of Dixon is directed toward RAVE, a software framework for simulating, running and managing multiple heterogeneous mobile-robot systems that have collaborative behavior (***page 1360, Abstract and Introduction***).

6.2. The art of Buschmann is directed to patterns of software architecture (***Title***).

6.3. The art of Tanenbaum is directed to interprocess communication using a computer network (***title; and page 4, figure 1-1***).

6.4. Regarding claim 13, Dixon appears to teach a memory, and a processor coupled to the memory, the memory for storing instructions that cause a processor to execute (***page 1360, section 1 Introduction, second paragraph reference to RAVE running on a computer***).

6.4.1. Regarding (***page 1360, section 1 Introduction, second paragraph reference to RAVE running on a computer***); it would have been obvious that a computer has a memory, and a processor coupled to the memory, the memory for storing instructions that cause a processor to execute.

6.5. Regarding claims 1 and 13:

6.6. Dixon appears to teach establishing a plurality of meta-modules, each of the plurality of meta-modules simulating an element in a system of elements (***figure 3, elements labeled "Virtual Robot" and "Real Robot"***).

6.7. Dixon appears to teach establishing one or more world modules associated with respective ones of one or more interaction phenomenon such that each of the one or more world modules is associated with each meta-module of a group of the plurality of meta-modules, the group being associated with one of the one or more interaction phenomenon, the meta-modules from each group forming a grouping of meta-modules (*page 1363, figure 3, modules labeled "Environment Manager" and "Real World"; and page 1363, section 3.4 Overall Architecture; and page 1362, figure 1; and pages 1361 - 1362, section 3.2 Information Servers*).

6.8. Dixon does not specifically teach establishing one or more world modules associated with respective ones of one or more interaction phenomenon such that each of the one or more world modules is associated with *a proxy module from* each meta-module of a group of the plurality of meta-modules, the group being associated with one of the one or more interaction phenomenon, *the proxy module* from each *meta-module of the* group forming a grouping of *proxy modules*.

6.9. Buschmann appears to teach that each of the one or more world modules is associated with a proxy module from each meta-module of a group of the plurality of meta-modules modules (*page 263, first and second paragraphs and illustration; and page 264*).

6.9.1. Regarding (*page 263, first and second paragraphs and illustration; and page 264*); it would have been obvious that one or more world modules is

associated with a proxy module from each meta-module of a group of the plurality of meta-modules modules.

6.10. Tanenbaum appears to teach the proxy module from each meta-module of the group forming a grouping of proxy modules (***page 138, figure 2-40***).

6.10.1. Regarding (***page 138, figure 2-40***); it would have been obvious that the proxy modules form a grouping of proxy modules.

6.11. The motivation to combine the art of Buschmann with the art of Dixon is that the access to the component should be transparent and simple for the client (***Buschmann, page 264, paragraph 2, bullet 2***).

6.12. The motivation to combine the art of Tanenbaum with the art of Dixon is the ability to produce interactions between source modules and target modules that are linear in size and appears from the outside as a circuit switch (***page 139, paragraphs 1 - 4***).

6.13. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Buschmann with the art of Dixon to produce the invention of claims 1 and 13.

7. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot

Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

7.1. Regarding claims 3 and 15, Dixon appears to teach that one or more of the one or more world modules is associated with another one or more of the one or more world modules (***page 1362, figure 1***).

8. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

8.1. Regarding claims 4 and 16, Dixon appears to teach the step of simulating one of the one or more world modules by accessing one or more member functions in the world modules (***page 1362, left-side column, first paragraph***).

8.2. Dixon does not specifically teach the step of simulating one of the one or more world modules by accessing one or more member functions in the ***grouping of proxy modules***.

8.3. Buschmann appears to teach calling member functions of a proxy to perform functions of a component (***pages 263 - 265***).

9. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall), in view of Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

9.1. The art of Oualline is directed to C++ programming (Title), an object-oriented programming language (***page 6, paragraph 2***).

9.2. Regarding claims 5 and 17, the parent claims teach a proxy module used in a system of elements being simulated.

9.3. Dixon does not specifically teach the step of ***dynamically allocating the proxy module at a desired point in*** the simulation of the system of elements ***so as to accommodate the addition of an element in*** the system of elements being simulated.

9.4. Oualline appears to teach dynamically allocating a module at a desired point in a system so as to accommodate the addition of an object (***page 357***).

9.5. The motivation to use the art of Oualline with the art of Dixon is to only create an object if it exists, and allocate space as needed (***Oualline, page 357, paragraph that starts with "Suppose we are . . . "***).

10. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996,

John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall), and Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

10.1. Dixon appears to teach dynamically generating the proxy module by by the one or more world modules (***page 1363, figure 3, relationship between environment manager and virtual robot***).

11. Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall), and Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

11.1. Dixon does not specifically teach that dynamically allocating is performed during execution without re-compiling.

11.2. Oualline appears to teach that dynamically allocating is performed during execution without re-compiling (***page 357, starting at the paragraph that starts with "Suppose we are . . . "; please note that the new operator creates an object during execution without re-compiling***).

12. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall), in view of Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

12.1. The art of Oualline is directed to C++ programming (***Title***), an object-oriented programming language (***page 6, paragraph 2***).

12.2. Regarding claims 8 and 20, the parent claims teach a proxy module used in a system of elements being simulated.

12.3. Dixon does not specifically teach the step of ***dynamically de-allocating the proxy module at a desired point in*** the simulation of the system of elements ***so as to accommodate the deletion of an element in*** the system of elements being simulated.

12.4. Oualline appears to teach dynamically de-allocating a module at a desired point in a system so as to accommodate the deletion of an object (***page 358***).

12.4.1. Regarding (***page 358***); it is obvious that the *delete* operator is the opposite of the *new* operator.

12.5. Since the *delete* operator is the opposite of the *new* operator, the motivation to use the art of Oualline with the art of Dixon is the opposite of the motivation to use the *new* operator, to delete an object if it does not exist, and de-allocate space as needed (***Oualline, page 357, paragraph that starts with "Suppose we are . . . "***).

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks",

1996, third edition, Prentice Hall), and Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

13.1. Dixon does not specifically teach that the step of ***dynamically de-allocating is performed during execution without re-compiling***.

13.2. Oualline appears to teach dynamically de-allocating is performed during execution without re-compiling (***page 358***).

13.3. Regarding (***page 358***); it is obvious that the *delete* operator is a C++ program language command performed during execution without re-compiling.

14. Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

14.1. Dixon appears to teach that the system of elements includes one or more of: a system of embodied agents (***page 1365, figures 5 and 6; please note that the robot is***

obviously an embodied agent), a system of robots (*page 1365, figures 5 and 6*), a system of mobile communication terminals (*page 1365, figures 5 and 6; and page 1364, figure 4; please note that the robot is also a mobile communication terminal since it has a transmitter*), and a system of vehicles (*page 1365, figures 5 and 6; please note that the robot is obviously a vehicle*).

15. Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons), and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

15.1. Dixon does not specifically teach the step of one or more world modules dynamically allocating one or more ports to the proxy module.

15.2. Tanenbaum appears to teach dynamically allocating one or more ports to a process object for communications (*page 523, section 6.4.1, first paragraph; pages 486 -487 and figure 6-6*).

15.3. The motivation to use the art of Tanenbaum with the art of Dixon is the ability to dynamically create a new communication end point (i.e. port) and release it (***Tanenbaum, page 487, figure 6-6, primitives socket and close***).

16. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) and Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons) and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1996, third edition, Prentice Hall).

16.1. Dixon does not appear to teach the step of updating the proxy module by one or more world modules.

16.2. Buschmann appears to teach updating the proxy module by one or more world modules (***page 339***).

16.2.1. Regarding (***page 339***); it would have been obvious that a proxy module (i.e. subscriber) is updated by a world module (i.e. publisher).

16.3. The motivation for using the art of Buschmann with the art of Dixon is the ability to have data change in one place and be updated in other places (***Buschmann, page 339, paragraph labeled "Problem"***).

17. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon (Dixon, Kevin; Dolan, John; Huang, Wesley; Paredis, Christiaan; Khosla, Pradeep; "RAVE: A Real and Virtual Environment for Multiple Mobile Robot Systems", 1999, Proceedings of 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, 17-21 Oct. 1999, Volume 3, Pages: 1360 - 1367) in view of Buschmann (Buschmann, Frank; Meunier, Regine; Rohnert, Hans; Sommerlad, Peter; Stal, Michael; "Pattern-Oriented Software Architecture A System of Patterns", 1996, John Wiley & Sons), further in view of Oualline (Oualline, Steve; "Practical C++ Programming", 1995, O'Reilly & Associates).

17.1. The art of Dixon is directed toward RAVE, a software framework for simulating, running and managing multiple heterogeneous mobile-robot systems that have collaborative behavior (***page 1360, Abstract and Introduction***).

17.2. The art of Buschmann is directed to patterns of software architecture (***Title***).

17.3. The art of Oualline is directed to C++ programming (Title), an object-oriented programming language (***page 6, paragraph 2***).

17.4. Dixon appears to teach simulating each element in a system of elements with a met-module (*figure 3, elements labeled "Virtual Robot" and "Real Robot"*).

17.5. Dixon appears to teach establishing a world module for each of one or more interaction phenomena (*page 1363, figure 3, modules labeled "Environment Manager" and "Real World"; and page 1363, section 3.4 Overall Architecture; and page 1362, figure 1; and pages 1361 - 1362, section 3.2 Information Servers*).

17.6. Dixon appears to teach associating each element in the system of elements with one or more modules in the plurality modules (*page 1364, figure 4 and section 4*).

17.7. Dixon does not specifically teach establishing an association between the world module and a proxy module associated with each of one or more elements of the system of elements which have an association with the interaction phenomenon corresponding to the world module.

17.8. Dixon does not specifically teach dynamically allocating the proxy module during the simulation so as to accommodate the addition of another element in the system of elements.

17.9. Buschmann appears to teach establishing an association between the world module and a proxy module associated with each of one or more elements of the system of elements which have an association with the interaction phenomenon

corresponding to the world module (*page 263, first and second paragraphs and illustration; and page 264*).

17.9.1. Regarding (*page 263, first and second paragraphs and illustration; and page 264*); since Buschmann teaches a client of a component communicates with a representative rather than the component itself, it would have been obvious to establish an association between the world module and a proxy module associated with each of one or more elements of the system of elements which have an association with the interaction phenomenon corresponding to the world module.

17.10. The motivation t o combine the art of Buschmann with the art of Dixon is that the access to the component should be transparent and simple for the client (*Buschmann, page 264, paragraph 2, bullet 2*).

17.11. Oualline appears to te ach dynamically allocating the proxy module during the simulation so as to accommodate the addition of another element in the system of elements (*page 357*).

17.11.1. Regarding (*page 357*); since Oualline teaches dynamically allocating an object so as to accommodate the addition of another object in a list, it would have been obvious to dynamically allocate the proxy module during the

simulation so as to accommodate the addition of another element in the system of elements.

17.12. The motivation t o use the art of Oualline with the art of Dixon is the ability to keep storage use to a minimum and only allocate space for an object as needed (*Oualline, page 357, the paragraph that starts with "Suppose we are . . . "*).

17.13. Therefore, as discus sed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Buschmann and Oualline with the art of Dixon to produce the invention of claim 24.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell L. Guill whose telephone number is 571-272-3749. The examiner can normally be reached on Monday - Friday 9:00 AM - 5:30 PM.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William Thomson
for my Grammer
TC 2100
AU 2123

RG